

AMENDMENTS TO THE CLAIMS

1. (Canceled)
2. (Currently Amended) A microlithographic reduction projection catadioptric objective having an object side and an image side and a plurality of curved mirrors, wherein directly after a most imageward curved mirror the beam diverges.
3. (Currently Amended) ~~The~~ A microlithographic reduction projection catadioptric objective having an image side and an object side and curved mirrors and being devoid of planar folding mirrors, comprising an aperture plane on the image side of a most imageward curved mirror and according to claim 1, comprising 4 curved mirrors and more than 8 lenses.
4. (Currently Amended) A microlithographic reduction projection catadioptric objective having a system ~~with an unobscured pupil that is~~ free of central obscuration of an aperture, comprising a plurality of optical elements and having a straight axis of symmetry of all curvatures of all optical elements, wherein no more than two optical elements deviate substantially from disk form.
5. (Original) The microlithographic reduction projection catadioptric objective according to claim 3, comprising no more than one optical element that is in a substantially non rotationally symmetric form.
6. (Currently Amended) A microlithographic reduction projection catadioptric objective having an object side and an image side and curved mirrors and being devoid of planar folding mirrors, comprising an aperture plane on the image side of a most imageward curved mirror, the

objective, consisting in sequence from the object side to the image side of a catadioptric group providing a real intermediate image, a catoptric or catadioptric group as a whole providing a virtual image, and a dioptric group providing a real image.

7. (Canceled)
8. (Currently Amended) A microlithographic reduction projection catadioptric objective having an object side and an image side, comprising, in sequence from the object side to the image side, a catadioptric group comprising one curved mirror and having a negative reduction ratio, a group comprising an odd number of curved mirrors and having a positive reduction ratio, and a dioptric lens group having a negative reduction ratio, wherein at least two curved mirrors face one another and are free from any lenses being physically therebetween.
9. (Original) The objective according to claim 6, wherein the catadioptric group comprises a positive field lens group and a negative lens group next to a mirror, and wherein the dioptric lens group comprises more positive than negative lenses.
10. (Original) A microlithographic reduction projection catadioptric objective, having an object side and an image side, comprising an even number greater than two of curved mirrors, with an unobscured system aperture and including more lenses than curved mirrors, being devoid of planar folding mirrors and comprising an aperture plane on the image side of a most imageward curved mirror.
11. (Canceled)
12. (Original) A microlithographic reduction projection catadioptric objective, comprising 4 curved mirrors and more than 8 lenses forming a

31. (Original) Projection exposure apparatus comprising a projection objective according to claim 6, an excimer light source, an illumination system, a reticle handling, positioning and scanning system, and a wafer handling, positioning and scanning system.
32. (Original) Projection exposure apparatus comprising a projection objective according to claim ~~7~~ 41, an excimer light source, an illumination system, a reticle handling, positioning and scanning system, and a wafer handling, positioning and scanning system.
33. (Original) Projection exposure apparatus comprising a projection objective according to claim 8, an excimer light source, an illumination system, a reticle handling, positioning and scanning system, and a wafer handling, positioning and scanning system.
34. (Original) Projection exposure apparatus comprising a projection objective according to claim 17, an excimer light source, an illumination system, a reticle handling, positioning and scanning system, and a wafer handling, positioning and scanning system.
35. (Currently Amended) A microlithographic reduction projection catadioptric objective having an object side and an image side, comprising more than two curved mirrors and no more than one optical element that is a cut off section of a body of revolution, consisting of, in sequence from the object side to the image side, a catadioptric group providing a real intermediate image, a catoptric or catadioptric group providing a virtual image, and a dioptric group providing a real image.
36. (Previously Added) The objective of claim 12, wherein no more than one optical element deviates substantially from disk form.

37. (Previously Added) The objective according to claim 2, comprising, in sequence from the object side to the image side, a field lens group, a catadioptric group comprising one or more negative lenses and a concave mirror, generating axial chromatic aberration, a group comprising an odd number of curved mirrors, and a positive lens group.
38. (Previously Added) The objective of claim 2, wherein the most imageward mirror is convex.
39. (Previously Added) The objective of claim 4, having an object side and an image side, wherein a most imageward mirror is convex.
40. (Previously Added) The objective of claim 6, wherein a most imageward mirror is convex.
41. (Currently Amended) A microlithographic reduction projection catadioptric objective having an object side and an image side, comprising, in sequence from the object side to the image side, a field lens group, a catadioptric group comprising one or more negative lenses and a concave mirror, generating axial chromatic aberration, a group comprising an odd number of curved mirrors, and a positive lens group
~~The objective of claim 7,~~ wherein a most imageward mirror is convex.
42. (Previously Added) The objective of claim 8, wherein a most imageward mirror is convex.
43. (Previously Added) The objective of claim 10, wherein the most imageward mirror is convex.
44. (Currently Amended) A microlithographic reduction projection catadioptric objective having an object side and an image side, comprising an even number greater than two of curved mirrors, with an

unobscured system aperture and including more lenses than curved mirrors, wherein after a most imageward curved mirror the beam diverges and ~~The objective of claim 11,~~ wherein the most imageward mirror is convex.

45. (Previously Added) The objective of claim 12, having an object side and an image side, wherein a most imageward mirror is convex.